

CHAPTER 3

Affected Environment

Affected Environment

3.1 Introduction

This chapter describes the affected environment for resources potentially affected by implementing the Proposed Action and the alternatives. The affected environment is referred to in this EIS as the Primary Assessment Area, which is the focus of the impacts analysis presented in Chapter 4. The Primary Assessment Area includes the commercial timberlands within those portions of 11 HPAs on the west slopes of the Klamath Mountains and the Coast Range in California where Green Diamond operates or could operate in the future.¹ Green Diamond currently owns and operates on 416,532 acres within the 11 HPAs, but could expand within the 11 HPAs by approximately 267,142 acres. Green Diamond lands, therefore, represent approximately 61 percent of the 683,674 acres comprising the Primary Assessment Area. As discussed in greater detail in Sections 5 and 7 of Green Diamond's proposed AHCP/CCAA, general habitat and relevant environmental conditions, as well as the potential impacts to the covered species, are sufficiently similar across the Primary Assessment Area to support the application of conservation measures contained in the proposed AHCP/CCAA on any lands on which Green Diamond operates within the 11 HPAs during the term of the Permits. For purposes of analysis, site-specific information on Green Diamond-owned lands has been extrapolated to other commercial timberlands within the Primary Assessment Area.

In addition to the Primary Assessment Area lands analyzed in this EIS, the regional setting is described to provide an overall context for the analysis of the Primary Assessment Area in Chapter 4. The regional setting addresses those portions of the 11 HPAs that include the Primary Assessment Area as well as areas that are not part of the Primary Assessment Area.

An additional 25,677 acres of rain-on-snow areas within Trinity and Del Norte counties, outside of the 11 HPAs are described in this chapter to provide the setting for Alternative C (Expanded Species and Geographic Coverage). The impacts of the 25,677 acres included as part of Alternative C are presented in Chapter 4.

The following resource categories were selected for detailed analysis in the EIS.

- Section 3.2 – Geology, Geomorphology, and Mineral Resources
- Section 3.3 – Hydrology and Water Quality
- Section 3.4 – Aquatic Resources
- Section 3.5 – Vegetation/Plant Species of Concern
- Section 3.6 – Terrestrial Habitat/Wildlife Species of Concern
- Section 3.7 – Air Quality
- Section 3.8 – Visual Resources
- Section 3.9 – Recreational Resources
- Section 3.10 – Cultural Resources

¹ This includes all commercial timberlands, with the exception of lands owned by Pacific Lumber Company, within the 11 HPAs.

- Section 3.11 – Land Use
- Section 3.12 – Social and Economic Conditions

Because no differences in noise effects are expected as a result of issuing the proposed incidental take permit, noise issues do not warrant further analysis.

3.2 Geology, Geomorphology, and Mineral Resources

3.2.1 Introduction

North coastal California includes some of the most rapidly eroding areas in the United States. Streams draining the area, such as the Eel River, have some of the highest suspended sediment loads per unit area recorded in the world (Judson and Ritter, 1964). One fundamental reason for this occurrence is the unstable geology of the Coast Range (California Department of Water Resources (CDWR, 1982). A basic knowledge of the geology and geomorphology of the region is essential to understanding the environmental condition of the area. The following sections provide a description of the geology and geomorphology found within the Primary Assessment Area. The information presented below is intended to provide a broad overview of how geologic characteristics such as bedrock composition, bedrock structure, and tectonic uplift relate to topography, hillslope mass wasting, and erosion in the region.

3.2.2 Regional Geology

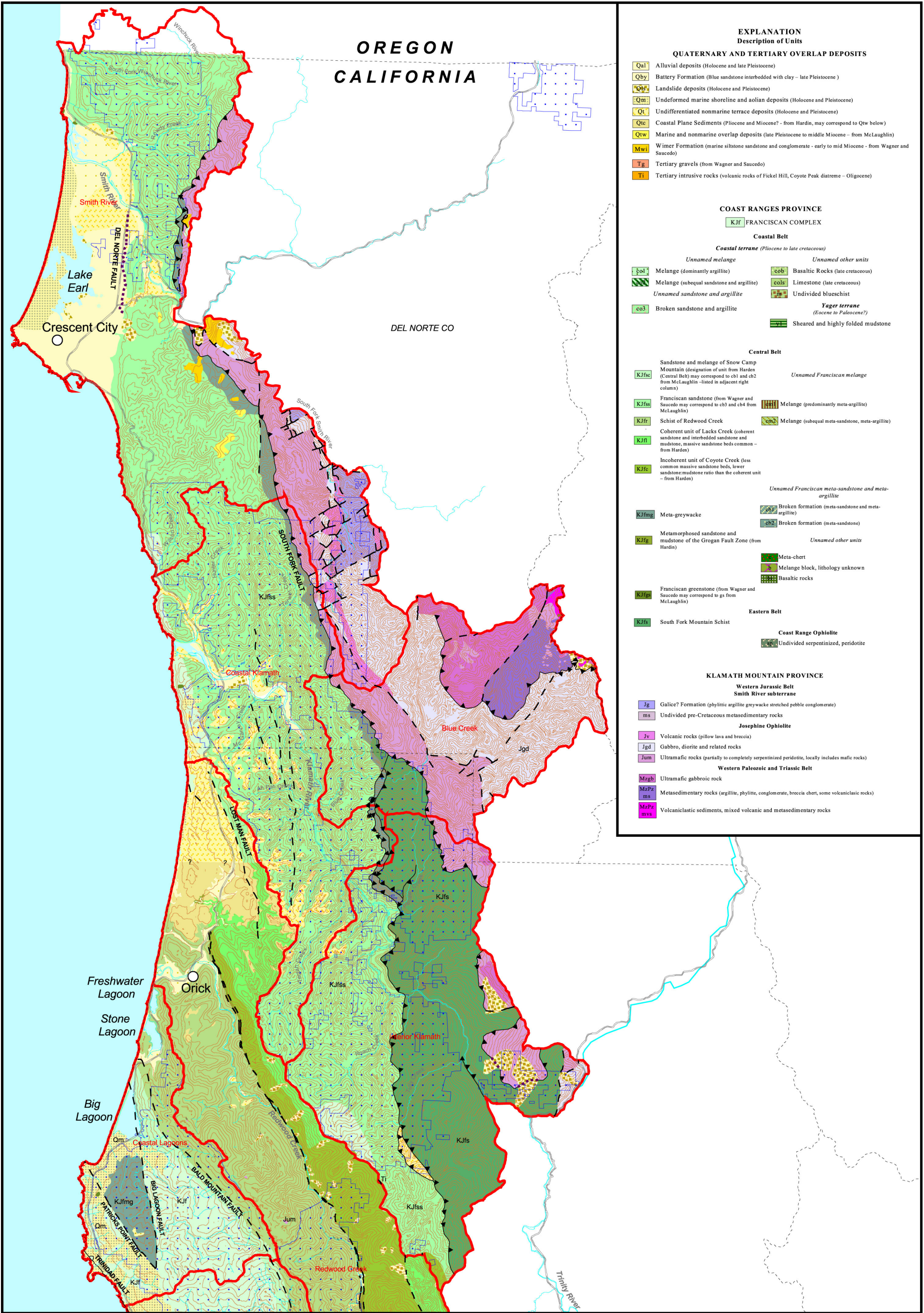
The Primary Assessment Area is located mostly within California's Coast Ranges geologic province. The eastern margin of the northern part of the Primary Assessment Area is within the Klamath Mountains geologic province (Figure 3.2-1). These provinces include a complex of various geologic terranes that collectively are within the convergent margin of the North American plate. Within the individual provinces and terranes, geomorphic conditions vary widely.

On a regional scale, the bedrock in the Primary Assessment Area is a composite of accreted oceanic rocks and pre- and post-accretionary plutonic rocks that are overlain in places by younger depositional strata. Locally, the bedrock can vary greatly, ranging from deeply weathered sandstone and mudstone, to metasedimentary rock, greenstone, and ultramafic bedrock.

The geologic structure of the region generally is dominated by a series of north to northwest trending faults. The faults correspond to topographic highs (such as the South Fork Mountain Fault) and topographic lows (such as the Grogan Fault). Numerous northwest-trending anticlines and synclines are associated with the faulting and also contribute to the shape of the landscape.

The extensive uplift of the region is well known. The height of the mountains and the high elevation of bedrock that is composed of marine sediments and ultramafic ophiolite sequences are the most obvious indicators of this uplift.

Accretion, deformation, and uplift of the region is ongoing today, as interactions continue between the Gorda, Pacific, and North American tectonic plates along the continental margin. Slip rates along the major thrust faults in the area is on the order of several millimeters per year (California Geological Service [CGS]).



EXPLANATION	
Description of Units	
QUATERNARY AND TERTIARY OVERLAP DEPOSITS	
Qal	Alluvial deposits (Holocene and late Pleistocene)
Qby	Battery Formation (Blue sandstone interbedded with clay - late Pleistocene)
Qlf	Landslide deposits (Holocene and Pleistocene)
Qm	Undeformed marine shoreline and aeolian deposits (Holocene and Pleistocene)
Qt	Undifferentiated nonmarine terrace deposits (Holocene and Pleistocene)
Qtc	Coastal Plane Sediments (Pliocene and Miocene? - from Hardin, may correspond to Qtw below)
Qtw	Marine and nonmarine overlap deposits (late Pleistocene to middle Miocene - from McLaughlin)
Mwi	Wimer Formation (marine siltstone sandstone and conglomerate - early to mid Miocene - from Wagner and Saucedo)
Tg	Tertiary gravels (from Wagner and Saucedo)
Ti	Tertiary intrusive rocks (volcanic rocks of Fickel Hill, Coyote Peak diatreme - Oligocene)
COAST RANGES PROVINCE	
KJf FRANCISCAN COMPLEX	
Coastal Belt	
Coastal terrane (Pliocene to late cretaceous)	
Unnamed melange	
col	Melange (dominantly argillite)
col	Melange (subequal sandstone and argillite)
Unnamed sandstone and argillite	
co3	Broken sandstone and argillite
Unnamed other units	
cob	Basaltic Rocks (late cretaceous)
col	Limestone (late cretaceous)
un	Undivided blueschist
Yager terrane (Eocene to Paleocene?)	
un	Sheared and highly folded mudstone
Central Belt	
Sandstone and melange of Snow Camp Mountain (designation of unit from Hardin (Central Belt) may correspond to cb1 and cb2 from McLaughlin - listed in adjacent right column)	
KJfsc	Franciscan sandstone (from Wagner and Saucedo may correspond to cb3 and cb4 from McLaughlin)
KJfs	Schist of Redwood Creek
KJfn	Coherent unit of Lacks Creek (coherent sandstone and interbedded sandstone and mudstone, massive sandstone beds common - from Hardin)
KJfc	Incoherent unit of Coyote Creek (less common massive sandstone beds, lower sandstone:mudstone ratio than the coherent unit - from Hardin)
Unnamed Franciscan melange	
un	Melange (predominantly meta-argillite)
un	Melange (subequal meta-sandstone, meta-argillite)
Unnamed Franciscan meta-sandstone and meta-argillite	
KJfmg	Meta-greywacke
KJfg	Metamorphosed sandstone and mudstone of the Grogan Fault Zone (from Hardin)
Unnamed other units	
cb1	Broken formation (meta-sandstone and meta-argillite)
cb2	Broken formation (meta-sandstone)
un	Meta-chert
un	Melange block, lithology unknown
un	Basaltic rocks
KJfs	Franciscan greenstone (from Wagner and Saucedo may correspond to gs from McLaughlin)
KJfs	South Fork Mountain Schist
Eastern Belt	
Coast Range Ophiolite	
un	Undivided serpentinized, peridotite
KLAMATH MOUNTAIN PROVINCE	
Western Jurassic Belt	
Smith River subterrane	
Jg	Galice? Formation (phyllitic argillite greywacke stretched pebble conglomerate)
ms	Undivided pre-Cretaceous metasedimentary rocks
Josephine Ophiolite	
Jv	Volcanic rocks (pillow lava and breccia)
Jgd	Gabbro, diorite and related rocks
Jum	Ultramafic rocks (partially to completely serpentinized peridotite, locally includes mafic rocks)
Western Paleozoic and Triassic Belt	
Magb	Ultramafic gabbroic rock
MzPz	Metasedimentary rocks (argillite, phyllite, conglomerate, breccia chert, some volcanoclastic rocks)
ms	Metasedimentary rocks (argillite, phyllite, conglomerate, breccia chert, some volcanoclastic rocks)
MzPz	Volcanoclastic sediments, mixed volcanic and metasedimentary rocks
mvs	Volcanoclastic sediments, mixed volcanic and metasedimentary rocks

- Base Map Features
- Hydrographic Planning Areas
 - City
 - Major Roads
 - County Line
 - Rivers
 - Green Diamond Ownership
 - Contours (200 foot Intervals)

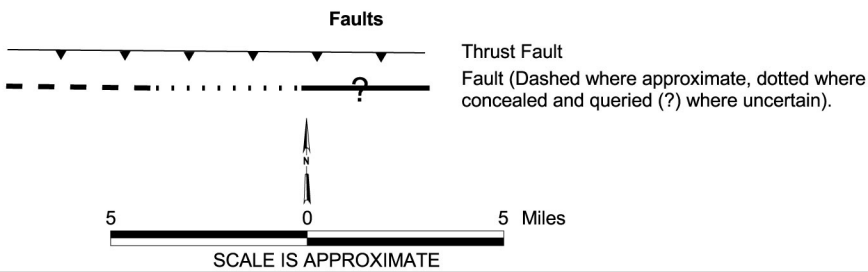


Figure 3.2-1
Geology of the Green Diamond
Hydrographic Planning
Areas (Page 1 of 3)